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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,213	02/27/2002	Herman Pieter Charles Eduard Kuipers	TS0793 US	9304

7590 02/18/2004

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EXAMINER	
MEDINA SANABRIA, MARIBEL	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AB

Office Action Summary	Application No.	Applicant(s)	
	10/070,213	KUIPERS ET AL.	
	Examiner	Art Unit	
	Maribel Medina	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/27/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 4 is objected to because of the following informalities: in line 1, "claim1" should be changed to --claim 1--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,942,346 (Ahmed et al).

Ahmed et al disclose transport means comprising a system for the catalytic partial oxidation of a fuel (See col. 2, lines 4-9). No difference is seen between the apparatus of claim 11 and the apparatus disclosed by Ahmed et al. Note, "A claim containing a "Recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus form a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,789,540 (Jenkins) in view of EP 629578 (Jacobs et al) and Michalski et al, Temperature Measurement, 2nd Edition, John Wiley & Sons Ltd, pp. 209-228, 2001.

Jenkins discloses a process for the catalytic partial oxidation (See col. 1, line 52- col. 2, line 15) of a hydro-carbonaceous fuel (methanol) into a conversion product (hydrogen-containing gas), wherein a feed mixture comprising the methanol and oxygen is contacted with a catalyst bed (see col. 2, lines 28-31).

The process comprises (a) setting the flow rate of the methanol and oxygen-containing gas (See col. 4, lines 45-49); (b) determining the actual temperature of the upstream surface of the catalyst bed (See col.2, lines 50-68; and col.4, lines 1-10); (c) generating and output signal that is a function of the difference between the actual temperature and a set point for the temperature; and (d) using the output signal to adjust the flow rate of the fuel and/or of the oxygen-containing gas (See col. 2, line 61 to col. 3, line 6; and col. 4, lines 1-10).

Jenkins discloses the use of a thermocouple to determine the temperature in the catalyst bed, and using the output of the thermocouple to adjust the flow rate of the oxygen-containing gas, however fail to disclose determining the temperature by "means of a quick response device within a time frame of from between 1 to between 100 milliseconds."

Jacobs et al is relied upon to teach a catalytic partial oxidation process wherein the catalyst temperature is determined by optical pyrometry (See page 5, lines 29-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a quick response device such as the optical pyrometer taught by Jacobs et al , in Jenkins process, since this a known functional equivalent of the thermocouple disclosed by Jenkins. Alternatively, one of ordinary skill in the art would have been motivated to substitute the thermocouple of Jenkins with the optical pyrometer of Jacobs et al in view of its precision and advantages over thermocouples. In regards to the time frame limitation recited in claim 1, and the limitations of claims 6,7 and 8, these are well known properties and technical data of optical pyrometers (See Michalski et al, table 11.3).

6. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins in view of Jacobs et al and Michalski et al as applied to claims 1-8 above, and further in view of Perry et al, Perry's Chemical Engineer's Handbook, 7th Edition, McGraw-Hill, pp. 8-65 to 8-84, 1997.

Jenkins in view of Jacobs et al and Michalski et al apply herein as above. Jenkins discloses the use of a metered valve and adjusting the flow rate of the oxygen-containing gas (See col. 4, lines 1-10), however fails to disclose adjusting the flow rate by means of rapid response actuator and fails to disclose adjusting the fuel flow rate by means of pulsed liquid injection system.

Perry's et al is relied upon to teach that a control valve consists of valve and an actuator (See page 8-64). Therefore, it is expected that Jenkins metered valve contains an actuator. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a rapid response actuator in the process of the combined references, in view of the use of the quick response device (optical pyrometer) used in the temperature determining step.

7. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,942,346 (Ahmed et al) in view of EP 629578 (Jacobs et al) and Michalski et al, Temperature Measurement, 2nd Edition, John Wiley & Sons Ltd, pp. 209-228, 2001.

Ahmed et al disclose a process for the catalytic partial oxidation (See col. 1, line 65- col. 2, line 3) of a hydro-carbonaceous fuel (methanol) into a conversion product (hydrogen-containing gas), wherein a feed mixture comprising the methanol and oxygen is contacted with a catalyst bed (see col. 4, lines 15-20).

The process comprises (a) setting the flow rate of the methanol and oxygen-containing gas (See col. 4, lines 6-24); (b) determining the actual temperature of the upstream surface of the catalyst bed (See col.4, lines 32-50); (c) generating and output signal that its a function of the difference between the actual temperature and a set point for the temperature; and (d) using the output signal to adjust the flow rate of the fuel and/or of the oxygen-containing gas (See col. 4, line 6-49).

Ahmed et al disclose the use of thermocouples to determine the temperature in the catalyst bed, and using the output of the thermocouple to adjust the flow rate of the methanol-containing gas, however fail to disclose determining the temperature by "means of a quick response device within a time frame of from between 1 to between 100 milliseconds."

Jacobs et al is relied upon to teach a catalytic partial oxidation process wherein the catalyst temperature is determined by optical pyrometry (See page 5, lines 29-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a quick response device such as the optical pyrometer taught by Jacobs et al, in Ahmed et al process, since this a known functional equivalent of the thermocouple disclosed by Ahmed et al. Alternatively, one of ordinary skill in the art would have been motivated to substitute the thermocouple of Ahmed et al with the optical pyrometer of Jacobs et al in view of its precision and advantages over thermocouples. In regards to the time frame limitation recited in claim 1, and the limitations of claims 6,7 and 8, these are well-known properties and technical data of optical pyrometers (See Michalski et al, table 11.3).

8. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed et al in view of Jacobs et al and Michalski et al as applied to claims 1-8 above, and further in view of Perry et al, Perry's Chemical Engineer's Handbook, 7th Edition, McGraw-Hill, 1997, pp. 8-65 to 8-84, 1997.

Ahmed et al in view of Jacobs et al and Michalski et al apply herein as above. Ahmed et al disclose the use of an ultrasonic nozzle (i.e. valve) and adjusting the flow rate of the methanol-containing gas (See col. 4, lines 1-10), however fail to disclose adjusting the flow rate by means of rapid response actuator.

Perry's et al is relied upon to teach that a control valve consists of valve and an actuator (See page 8-64). Therefore, it is expected that Ahmed et al ultrasonic nozzle contain an actuator. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a rapid response actuator in the process of the combined references, in view of the use of the quick response device (optical pyrometer) used in the temperature determining step.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maribel Medina whose telephone number is (571) 272-1355. The examiner can normally be reached on Monday through Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maribel Medina
Examiner
Art Unit 1754

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